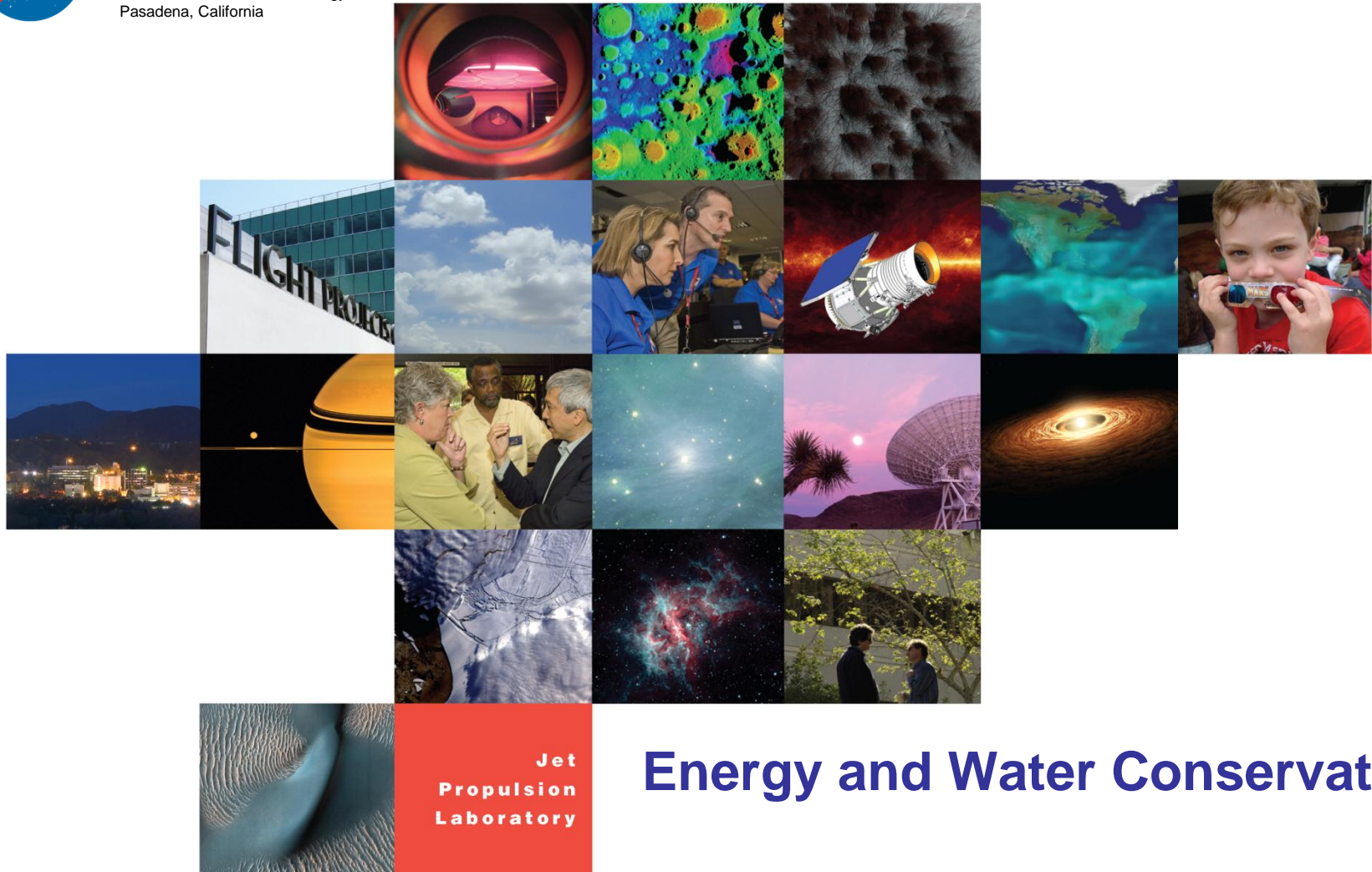


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Energy and Water Conservation

Steve Rigdon
Facilities Energy Manager
10/7/2010



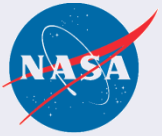
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Agenda



- **Greening the Government**
- **Federal Mandates**
- **DOE & FEMP**
- **ESPC 101**
- **ESCO**



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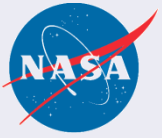
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Greening the Government



JPL a NASA center is required to meet federal energy reduction mandates

- **Energy Policy Act 2005**
- **EO 13423 Strengthening Federal Environmental, Energy, and Transportation Management**
- **Energy Security Independence Act 2007**
- **EO 13514 Federal Leadership in Environmental, Energy, and Economic Performance**



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Federal Mandates Summary



Federal Energy/Water Reduction and Sustainability Goals

- **Reduce Energy Consumption:**
 - 3% per year in 2007 through 2015 compared to 2003
- **Reduce Water Consumption:**
 - 2% per year 2008 through 2020 Compared to 2007
- **Increase use of Renewable Energy :**
 - 3% in 2007, 5% in 2010, 7.5% in 2013 and thereafter
- **Reduce GHG (Green House Gas):**
 - Scope 1, 2 and 3
- **Sustainability new and existing buildings:**
 - Construction and major renovation of buildings will comply with Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings



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Energy Savings Performance Contract ESPC

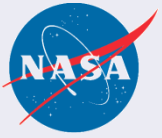


DOE Developed Alternate Financing Vehicle for Energy Projects

– Advantages

- Utilizes ESCO (Energy Service Company) under a federal IDIQ
- No upfront capital cost (projects to be financed)
- Allows for projects to be financed
- Energy cost savings pays for the energy conservation measures
- Energy cost savings is guaranteed by the ESCO
- Annual measurement and verification required





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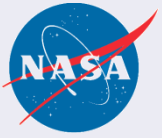
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Energy Service Companies

ESCO



- **Energy Service Companies**
 - Performs energy audit
 - Identifies potential ECM (Energy Conservation Measures)
 - Calculates energy and cost savings
 - 16 available under the current DOE ESPC IDIQ
 - Typically uses local A&E firms, mechanical and electrical contractors
- **ESCO Projects Include:**
 - HVAC upgrades
 - Chillers, VAV, VFD, VSP
 - Building Automation System
 - Installation, upgrades and programming
 - Lighting retrofits
 - CFL, T8/T5, LED
 - Renewable energy
 - Solar photovoltaic, solar heated water,
 - Water efficiencies
 - Low flow devices, irrigation controls
 - Utility billing and rate structure negotiation



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FEMP & Energy Star Equipment Procurement



Equipment Procurement Requirements:

- Energy Star

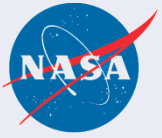
OR

- FEMP recommended

OR

- Top 25% of energy efficient





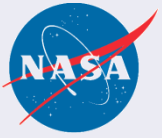
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Reference

- **DOE FEMP – Home Page**
 - <http://www1.eere.energy.gov/femp/index.html>
- **ESPC – Energy Savings Performance Contracts**
 - <http://www1.eere.energy.gov/femp/financing/espcs.html>
- **ESCO – 16 listed Energy Service Companies**
 - http://www1.eere.energy.gov/femp/financing/espcs_doeescos.html
- **Energy Star – For Government**
 - http://www.energystar.gov/index.cfm?c=government.bus_government



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Questions?

